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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,482	12/04/2003	Yong Hwan Kwon	5882P066	3071

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EXAMINER

MOONEY, MICHAEL P

ART UNIT PAPER NUMBER

2883

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,482

Applicant(s)

KWON ET AL.

Examiner

Michael P. Mooney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,10 and 11 is/are rejected.
- 7) ☒ Claim(s) 3,4,12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/4/03, 8/19/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election of claims 1-4, 10-13 in the reply filed on 5/11/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vawter et al. (6229947).

Vawter et al. teaches spot size converter, comprising: a semiconductor substrate (fig. 9); a first waveguide (figs. 9, 9A) stacked on the semiconductor substrate in a ridge shape and provided for optical coupling with an optical fiber (Abstract, figs. 9, 9A); and a second waveguide (e.g., fig.9 #90) formed on the

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first waveguide for a spot size conversion, wherein the second waveguide has a taper shape having a width that is gradually widened in a direction along the waveguide at a start portion (e.g., fig.9 #90).

Although Vawter et al. does not expressly state that the start portion of the said second waveguide has a "mesa structure or a reverse-mesa structure", Vawter et al. does teach a "radiused rib" (fig. 8A; col. 6 lines 40-52) which is an isolated elevation having a flat top. A structure composing an isolated elevation having a flat top may reasonably be interpreted to be a mesa structure.

One of ordinary skill in the art at the time the invention was made would have been motivated to use Vawter et al.'s mesa/radiused-rib structure in a configuration such as at the start position of the tapered waveguide in Vawter et al.'s figure 9 in order to obtain higher coupling efficiency.

Thus claim 1 is rejected.

Vawter et al. teaches wherein the mesa/radiused-rib structure or the reverse-mesa structure has a width of below 1 μm (middle portion in thickness), e.g. at col. 7 lines 25-32. Thus claim 2 is rejected.

By the reasons and references given above and notoriously well known principles in the art, each and every element of each of claims 10-11 are rendered obvious. Thus claims 10-11 are rejected.

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Allowable Subject Matter

Claims 3-4, 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

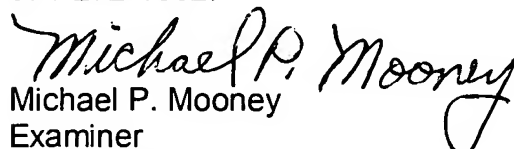
The prior art, either alone or in combination, does not disclose or render obvious a the unique combination of each and every specific element stated in each of claims 3-4, 12-13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Mooney whose telephone number is 571-272-2422. The examiner can normally be reached during weekdays, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1562.


Michael P. Mooney
Examiner
Art Unit 2883


Frank G. Font
Supervisory Patent Examiner
Art Unit 2883

FGF/mpm
7/22/05